

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.

L Number	Hits	Search Text	DB	Time stamp
1	2	6668298.pn.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 07:30
2	0	((("phase rotator" phase-rotator) with edge) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 07:35
3	0	((("phase rotator" phase-rotator) with edge\$) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 07:36
4	91	((("phase rotator" phase-rotator) with digital) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 07:42
5	36	((("phase rotator" phase-rotator) with digital with analog) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 08:05
6	34	((("phase rotator" phase-rotator) same ("analog to digital" analog-to-digital)) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:19
29	76	((("phase adj rotat\$3) phase-rotat\$3) same ("analog to digital" analog-to-digital atd)) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 08:47
34	62	((demodulat?r de-modulat?r) with ("phase rotator" phase-rotator)) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 10:56

43	98	("6307877" "5262779" "5572721" "6107876" "5812798" "6545507" "6222380" "6222380" "6009363" "6202008" "6430242" "6611217" "5583574" "4389636" "5266908" "4588986" "5243344" "4876695" "5579426" "5818846" "5517433" "4380761" "4615040" "5208666" "5365547" "5790610" "5005191" "5010559" "5987015" "6177835" "4584695" "4601045" "4800578" "4817115" "5025441" "5325398" "5557614" "5602848" "5608734" "5970128" "6028486" "6229859" "3585586" "3665474" "3899637" "4243941" "4263673" "4267591" "4389544" "4393516").pn.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 10:56
44	1		USPAT	2004/09/21 10:59
45	1		USPAT	2004/09/21 11:00
46	1		USPAT	2004/09/21 11:01
47	1		USPAT	2004/09/21 11:01
48	1		USPAT	2004/09/21 11:02
49	1		USPAT	2004/09/21 11:02
50	1		USPAT	2004/09/21 11:02
51	1		USPAT	2004/09/21 11:03
52	1		USPAT	2004/09/21 11:03
53	1		USPAT	2004/09/21 11:03

54	1		USPAT	2004/09/21 11:04
55	1		USPAT	2004/09/21 11:04
56	1		USPAT	2004/09/21 11:04
57	1		USPAT	2004/09/21 11:05
58	1		USPAT	2004/09/21 11:05
59	1		USPAT	2004/09/21 11:05
60	1		USPAT	2004/09/21 11:06
61	1		USPAT	2004/09/21 11:07
62	1		USPAT	2004/09/21 11:07
63	1		USPAT	2004/09/21 11:08
64	1		USPAT	2004/09/21 11:08
65	1		USPAT	2004/09/21 11:08
66	1		USPAT	2004/09/21 11:08
67	270	(710/65.ccls.) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:22
68	84	(710/69.ccls.) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:49
69	158	(710/71.ccls.) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:51
70	185	(710/106.ccls.) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:53
71	839	(710/305.ccls.) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 14:57
72	80	(710/51.ccls.) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 15:01
73	569	(710/62.ccls.) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 15:04
74	448	(710/105.ccls.) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 15:09
-	2	6222380.pn.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/18 13:40

-	0	((("phase rotator" phase-rotator) with convert\$3 with asynchronous with synchronous) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/18 14:06
-	0	((("phase rotator" phase-rotator) with asynchronous with synchronous) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/18 14:06
-	0	((("phase rotator" phase-rotator) same asynchronous same synchronous) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/18 14:07
-	1	((("phase rotator" phase-rotator) same ?synchronous) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/18 14:18
-	191	((("phase-lock\$2-loop) (phase adj lock\$2 adj loop)) same asynchronous same synchronous) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/18 14:19
-	54	((("phase-lock\$2-loop) (phase adj lock\$2 adj loop)) with asynchronous with synchronous) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/18 14:39
-	47	((PLL) with asynchronous with synchronous) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/18 14:54
-	2	((convert with asynchronous with synchronous) same ((phase-lock\$2-loop) (phase adj lock\$2 adj loop) pll)) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/18 14:56
-	17	((convert\$3 with asynchronous with synchronous) same ((phase-lock\$2-loop) (phase adj lock\$2 adj loop) pll)) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/18 15:20
-	21	((("phase rotator" phase-rotator) with convert) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/18 14:57
-	479	((("phase rotator" phase-rotator)) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/21 07:34
-	923	((convert\$3 with asynchronous with synchronous)) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/18 15:20
-	0	((convert\$3 with "asynchronous to synchronous")) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/18 15:21
-	0	((("asynchronous to synchronous")) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/18 15:21

-	424	((convert\$3 with (asynchronous adj5 synchronous))) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/18 15:21
-	378	((convert\$3 with (asynchronous adj4 synchronous))) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/18 15:21
-	331	((convert\$3 with (asynchronous adj3 synchronous))) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/18 15:22
-	240	((convert\$3 with (asynchronous adj2 synchronous))) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/18 15:22
-	147	((convert\$3 with (asynchronous adj synchronous))) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/18 15:22
-	4	((convert\$3 with (asynchronous with synchronous)) same (phase with rotat\$3)) and @ad<20010116	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/09/18 15:23

91

PLUS Search Results for S/N 09996091, Searched September 02, 2004

The Patent Linguistics Utility System (PLUS) is a USPTO automated search system for U.S. Patents from 1971 to the present. PLUS is a query-by-example search system which produces a list of patents that are most closely related linguistically to the application searched. This search was prepared by the staff of the Scientific and Technical Information Center, SIRA.

6307877
5262779
5572721
6107876
5812798
6545507
6222380
6222380
6009363
6202008
6430242
6611217
5583574
4389636
5266908
4588986
5243344
4876695
5579426
5818846
5517433
4380761
4615040
5208666
5365547
5790610
5005191
5010559
5987015
6177835
4584695
4601045
4800578
4817115
5025441

09996091_LIST

5325398
5557614
5602848
5608734
5970128
6028486
6229859
3585586
3665474
3899637
4243941
4263673
4267591
4389544
4393516

09996091_QUAL

6307877 66
5262779 59
5572721 59
6107876 59
5812798 59
6545507 59
6222380 57
6222380 57
6009363 57
6202008 57
6430242 57
6611217 57
5583574 56
4389636 56
5266908 56
4588986 56
5243344 56
4876695 56
5579426 56
5818846 56
5517433 56
4380761 56
4615040 56
5208666 56
5365547 56
5790610 56
5005191 56
5010559 56
5987015 56
6177835 56
4584695 56
4601045 56
4800578 56
4817115 56
5025441 56
5325398 56
5557614 56
5602848 56
5608734 56
5970128 56
6028486 56
6229859 56
3585586 56
3665474 56
3899637 56
4243941 56
4263673 56
4267591 56

09996091_QUAL

4389544 56
4393516 56

09996091_CLS

Most Frequently Occurring Classifications of Patents Returned
From A Search of 09996091 on September 02, 2004

Original Classifications

3 370/509
2 326/38
2 375/368
2 701/33

Cross-Reference Classifications

3 375/368
3 375/376
2 326/37
2 331/17
2 340/825.25
2 341/101
2 370/480
2 370/509
2 370/510
2 370/522
2 370/536
2 375/285
2 375/354
2 375/365
2 379/339

Combined Classifications

5 370/509
5 375/368
3 375/354
3 375/376
2 326/37
2 326/38
2 326/93
2 331/17
2 340/825.25
2 341/100
2 341/101
2 370/465
2 370/480
2 370/510
2 370/522
2 370/536
2 375/259
2 375/260
2 375/267
2 375/285

09996091_CLS

2 375/327
2 375/361
2 375/365
2 379/339
2 701/33

09996091 CLSTITLES

Titles of Most Frequently Occurring Classifications of Patents Returned

From A Search of 09996091 on September 02, 2004

- 5 370/509 (3 OR, 2 XR)
 Class 370 : MULTIPLEX COMMUNICATIONS
 370/473 ..Transmission of a single message having multiple packets
 370/498 .Combining or distributing information via time channels
 370/503 ..Synchronizing
 370/509 ...Using synchronization information contained in a frame
- 5 375/368 (2 OR, 3 XR)
 Class 375 : PULSE OR DIGITAL COMMUNICATIONS
 375/354 SYNCHRONIZERS
 375/362 .Frequency or phase control using synchronizing signal
 375/365 ..Synchronization word
 375/368 ...Synchronizer pattern recognizers
- 3 375/354 (1 OR, 2 XR)
 Class 375 : PULSE OR DIGITAL COMMUNICATIONS
 375/354 SYNCHRONIZERS
- 3 375/376 (0 OR, 3 XR)
 Class 375 : PULSE OR DIGITAL COMMUNICATIONS
 375/354 SYNCHRONIZERS
 375/371 .Phase displacement, slip or jitter correction
 375/373 ..Phase locking
 375/376 ...Phase locked loop
- 2 326/37 (0 OR, 2 XR)
 Class 326 : ELECTRONIC DIGITAL LOGIC CIRCUITRY
 326/37 MULTIFUNCTIONAL OR PROGRAMMABLE (E.G., UNIVERSAL, ETC.)
- 2 326/38 (2 OR, 0 XR)
 Class 326 : ELECTRONIC DIGITAL LOGIC CIRCUITRY
 326/37 MULTIFUNCTIONAL OR PROGRAMMABLE (E.G., UNIVERSAL, ETC.)
 326/38 .Having details of setting or programming of interconnections or logic functions

09996091_CLSTITLES

2 326/93 (1 OR, 1 XR)
 Class 326 : ELECTRONIC DIGITAL LOGIC CIRCUITRY
 326/93 CLOCKING OR SYNCHRONIZING OF LOGIC STAGES OR
 GATES

2 331/17 (0 OR, 2 XR)
 Class 331 : OSCILLATORS
 331/1R AUTOMATIC FREQUENCY STABILIZATION USING A PHAS
 E
 OR FREQUENCY SENSING MEANS
 331/17 .Particular error voltage control (e.g.,
 intergrating network)

2 340/825.25 (0 OR, 2 XR)
 Class 340 : COMMUNICATIONS: ELECTRICAL
 340/825 SELECTIVE
 340/825.25 .Audio system (e.g., by pulse signal)

2 341/100 (1 OR, 1 XR)
 Class 341 : CODED DATA GENERATION OR CONVERSION
 341/50 DIGITAL CODE TO DIGITAL CODE CONVERTERS
 341/100 .Serial to parallel

2 341/101 (0 OR, 2 XR)
 Class 341 : CODED DATA GENERATION OR CONVERSION
 341/50 DIGITAL CODE TO DIGITAL CODE CONVERTERS
 341/101 .Parallel to serial

2 370/465 (1 OR, 1 XR)
 Class 370 : MULTIPLEX COMMUNICATIONS
 370/464 COMMUNICATION TECHNIQUES FOR INFORMATION
 CARRIED IN PLURAL CHANNELS
 370/465 .Adaptive

2 370/480 (0 OR, 2 XR)
 Class 370 : MULTIPLEX COMMUNICATIONS
 370/473 ..Transmission of a single message having
 multiple packets
 370/480 .Combining or distributing information via
 frequency channels

2 370/510 (0 OR, 2 XR)
 Class 370 : MULTIPLEX COMMUNICATIONS
 370/473 ..Transmission of a single message having
 multiple packets
 370/498 .Combining or distributing information via tim

e

09996091_CLSTITLES
channels

370/503 ..Synchronizing
370/509 ...Using synchronization information contained
in a frame
370/510Synchronization information is distributed
over multiple frames

2 370/522 (0 OR, 2 XR)
Class 370 : MULTIPLEX COMMUNICATIONS
370/473 ..Transmission of a single message having
multiple packets
370/498 .Combining or distributing information via tim
e
channels
370/522 ..Signaling (ancillary to main information)

2 370/536 (0 OR, 2 XR)
Class 370 : MULTIPLEX COMMUNICATIONS
370/473 ..Transmission of a single message having
multiple packets
370/498 .Combining or distributing information via tim
e
channels
370/536 ..Demultiplexing single signal into plural
parallel channels (e.g., parallel transmiss
ion for
increasing transmission speed)

2 375/259 (1 OR, 1 XR)
Class 375 : PULSE OR DIGITAL COMMUNICATIONS
375/259 SYSTEMS USING ALTERNATING OR PULSATING CURRENT

2 375/260 (1 OR, 1 XR)
Class 375 : PULSE OR DIGITAL COMMUNICATIONS
375/259 SYSTEMS USING ALTERNATING OR PULSATING CURRENT
375/260 .Plural channels for transmission of a single
pulse train

2 375/267 (1 OR, 1 XR)
Class 375 : PULSE OR DIGITAL COMMUNICATIONS
375/259 SYSTEMS USING ALTERNATING OR PULSATING CURRENT
375/260 .Plural channels for transmission of a single
pulse train
375/267 ..Diversity

09996091_CLSTITLES

2 375/285 (0 OR, 2 XR)
 Class 375 : PULSE OR DIGITAL COMMUNICATIONS
 375/259 SYSTEMS USING ALTERNATING OR PULSATING CURRENT
 375/285 .Antinoise or distortion

2 375/327 (1 OR, 1 XR)
 Class 375 : PULSE OR DIGITAL COMMUNICATIONS
 375/316 RECEIVERS
 375/322 .Angle modulation
 375/324 ..Particular demodulator
 375/327 ...Phase locked loop

2 375/361 (1 OR, 1 XR)
 Class 375 : PULSE OR DIGITAL COMMUNICATIONS
 375/354 SYNCHRONIZERS
 375/359 .Self-synchronizing signal (self-clocking
 codes, etc.)
 375/361 ..Manchester code or biphase code

2 375/365 (0 OR, 2 XR)
 Class 375 : PULSE OR DIGITAL COMMUNICATIONS
 375/354 SYNCHRONIZERS
 375/362 .Frequency or phase control using synchronizin
 g signal
 375/365 ..Synchronization word

2 379/339 (0 OR, 2 XR)
 Class 379 : TELEPHONIC COMMUNICATIONS
 379/338 REPEATER (E.G., VOICE FREQUENCY)
 379/339 .With signal conversion (e.g., dial to DTMF,
 analog to PCM)

2 701/33 (2 OR, 0 XR)
 Class 701 : DATA PROCESSING: VEHICLES, NAVIGATION, AND
 RELATIVE LOCATION
 701/1 VEHICLE CONTROL, GUIDANCE, OPERATION, OR
 INDICATION
 701/29 .Vehicle diagnosis or maintenance indication
 701/33 ..Plural processors or external processor